

Inventor: RAYBONE ET AL
Serial No. 10/089,238
Group Art Unit 1753
Examiner: VerSteege

Amendments to the Specification:

Please replace the paragraph beginning at page 3, line 30, which begins with "The invention provides" and ending on page 4, line 17, with the following amended paragraph:

The invention provides, in one of its aspects, a method of treating gases which contain nitrogen oxides, carbonaceous particulates including soot, hydrocarbons, and other residual constituents ~~including oxygen~~, which method comprises passing the gases through a reactor comprising ~~a~~ at least one bed of active material in an enclosure having gas flow conduits for directing gas flow through or over the bed of active material, applying an electrical potential to generate a non-thermal plasma in gas permeating the active material, at least a component of the active material being such as to adsorb or trap carbonaceous particulates ~~including soot, characterized in that~~ the electrical potential ~~is~~ being applied to generate said non-thermal plasma during passage through the active material of the gases undergoing treatment ~~and the component of active material is so as to selectively adsorb or trap carbonaceous particulates and the gases are further subjected to the action of a NO selective catalyst comprising silver doped alumina which selectively absorbs both NO and hydrocarbons and/or partially oxygenated hydrocarbons and promotes their reaction together to reduce NO directly to N₂, whereby the trapped carbonaceous particulates including soot have a longer effective residence time in the non thermal plasma relative to species in the gas flow which are not adsorbed or trapped and are oxidized by oxidative species present in the gases while conversion of NO to NO₂ is much less likely to occur.~~

Please replace the paragraph beginning at page 5a, line 1, which begins with "The invention includes a", with the

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following amended paragraph:

The invention includes a non-thermal plasma reactor for the treatment of gases, which contain nitrogen oxides, carbonaceous particulates ~~including soot~~, hydrocarbons, and other residual constituents ~~including oxygen~~, which reactor comprises a bed of active material in an enclosure having gas flow conduits for directing gas to flow through or over the bed of active material, electrodes adapted when electrically energized to generate non-thermal plasma in the gas permeating the active material, at least a component of the active material ~~being such as~~ acting to adsorb or trap carbonaceous particulates including soot in the gas flow, wherein, in operation of the reactor, the component of active material is such as selectively to adsorb or trap carbonaceous particulates ~~said active material increases the effective residence time in the non-thermal plasma of the said carbonaceous particulates including soot relative to the residence time of species in the gas flow which are not adsorbed or trapped, and the trapped carbonaceous particulates including soot are oxidized by oxidative species present in the gases while conversion of NO to NO₂ is much less likely to occur,~~ and an NO selective catalyst comprising silver doped alumina is additionally provided for selectively adsorbing both NO and hydrocarbons and/or partially oxygenated hydrocarbons, and promoting their reaction together to reduce NO directly to N₂.